December 27, 2005

D.T.E. 02-38-C

Investigation by the Department of Telecommunications and Energy on its own motion into Distributed Generation.

ORDER ON REVISED MODEL DISTRIBUTED GENERATION INTERCONNECTION STANDARDS AND PROCEDURES TARIFF

I. INTRODUCTION

On February 24, 2004, the Department approved, with some modifications, the "Tariff to Accompany Proposed Uniform Standards for Interconnecting Distributed Generation ("DG") in Massachusetts" ("Model Interconnection Tariff"), filed by the Massachusetts Distributed Generation Interconnection Collaborative ("DG Collaborative"). Distributed Generation, D.T.E. 02-38-B (2004).[1,2] The Department authorized a two-year continuation of the DG Collaborative in order to include time for the DG Collaborative to refine the Model Interconnection Tariff and discuss the role of DG in distribution company planning. Id. at 35, 41. The Department requested that the DG Collaborative consider: (1) the interconnection process; (2) meter ownership; (3) network interconnection; and (4) the role of DG in distribution planning. Id.

On May 31, 2005, the DG Collaborative submitted its 2005 Annual Report ("2005 Report"). The DG Collaborative meetings, and preparation of the 2005 Report were

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[1] Distributed generation is "a generation facility or renewable energy facility connected directly to distribution facilities or to retail customer facilities which alleviate or avoid transmission or distribution constraints or the installation of new transmission facilities or distribution facilities." G. L. c. 164, § 1. A "generation facility" means plant or equipment that is used to produce, manufacture, or otherwise generate electricity and which is not a transmission facility. G.L. c. 164, § 1; 220 C.M.R. § 11.02.

[2] The DG Collaborative consists of electric distribution companies, DG providers, government and quasi-governmental agencies, consumers, and public interest groups. D.T.E. 02-38, at 2, n.2 (2004).

coordinated by the Massachusetts Technology Collaborative ("MTC")[3] with facilitation and technical consulting by Navigant Consulting, Inc.

Included with the 2005 Report are proposed revisions to the Model Interconnection Tariff ("Revised Model Interconnection Tariff"). On June 8, 2005, the Department issued a notice inviting all interested persons to file written comments on the Revised Model Interconnection Tariff. Comments were filed by the Commonwealth of Massachusetts Division of Energy Resources ("DOER"); Commonwealth of Massachusetts Division of Capital Asset Management ("DCAM"); Northeast Combined Heat and Power Initiative; KeySpan Energy Delivery (Boston Gas Company, Colonial Gas Company and Essex Gas Company each d/b/a KeySpan Energy Delivery New England); Massachusetts Electric Company and Nantucket Electric Company; and the Solar Energy Business Association of New England.

II. THE PROPOSED CHANGES TO THE MODEL INTERCONNECTION TARIFF

A. Summary of Recommendations

In order to address the issues identified by the Department, the DG Collaborative established: (1) a tariff and policies work group to address the interconnection process and meter ownership issues; (2) a technical work group to address the network interconnection issues; (3) a distribution planning work group to address the role of DG in distribution

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[3] MTC is a quasi-public agency that is charged with assisting the development of innovation technology and renewable energy in Massachusetts. Among other things, MTC administers the Renewable Energy Trust, which was established to promote the expansion of the Commonwealth's renewable energy industry. See G.L. c. 25, § 20.

planning (2005 Report at 2, 7, 25). The 2005 Report also explained the DG Collaborative plans for 2005/2006 (id. at 154-165).

The DG Collaborative recommended no further adjustments to the Model Interconnection Tariff on the issue of meter ownership because it did not perceive meter ownership as a barrier to the installation of DG (2005 Report at 5). The DG Collaborative recommends that the Department address this issue in a broad inquiry into metering issues (e.g., metering technologies, applicability of technologies to various customer classes, performance and cost, accuracy and certification) (id. at 6). See D.T.E. 02-38-B at 26-27.

The DG Collaborative addressed the role of DG in distribution company planning. This effort resulted in a series of discussions, presentations, and proposals for further analysis (id. at 25-29). In particular, the distribution planning work group agreed to focus on specific planning situations (id. at 28). Accordingly, each distribution company identified two distribution system "planning opportunities" as potential sites for distributed generation (id.). In 2005/2006, the distribution planning work group intends to scrutinize these planning opportunities as well as certain cost and operating data from existing DG installations and pilot projects[4] (id.). The purpose of that scrutiny is to identify, and, if possible, validate the full range of costs and benefits attributable to DG (id.). Business and regulatory models may

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[4] MTC is working with distribution companies and others to develop two to four congestion relief pilot projects that would include pilot or prototype installation of DG and other distributed energy resources in specific parts of the distribution system (2005 Report at 29).

result, depending on the merits of the information obtained by the distribution planning work group (id.).

B. Summary of Proposed Changes to Model Interconnection Tariff

The DG Collaborative noted that its tariff and policies work group has been reviewing interconnection activity data in order to determine how well the Model Interconnection Tariff has been working (id. at 31-48). In particular, the tariff and policies work group has reviewed the following information delineating every DG project: (i) time to completion; (ii) time in each step of the interconnection process; (iii) delay and reason for delay; (iv) cost; and (v) type of project (id. at 13-20, 33). The DG Collaborative stated that this tracking has facilitated: (1) review of specific projects to determine if and why a timeline may not have been met; (2) assessment of the overall level of DG installation in Massachusetts; and (3) improvements to the interconnection process (id. at 18, 33-77). The 2005 Report noted that one cause for delay has been submission of incomplete applications (id. at 5). In response, the MTC and DOER developed a DG Interconnection Guide that is available on the MTC website (www.masstech.org) (id.).

The DG Collaborative concluded that the interconnection process is working well (id. at 18). Nonetheless, in order to improve the efficiency of that process, the DG Collaborative identified seven substantive points related to the Model Interconnection Tariff for

change (id. at 18, 44-49). Attachment B to the 2005 Report included a revised Model Interconnection Tariff that incorporated the proposed changes.[5]

The changes address:

(1) notification of ISO New England, Inc. ("ISO-NE") of potential DG Projects;[6]
(2) approval of the wiring authority having jurisdiction for all applications;
(3) outdated references to IEEE P1547;
(4) redundant references to IEEE Standard 519 and IEEE Standard 1547-2003;
(5) specific version of UL 1741 to be replaced by generic standard;
(6) clarification of Application Instructions; and
(7) language amending the indemnification clause.

(id. at 18, Att. A at b-f).

In addition, members of the DG Collaborative identified formatting items such as section numbering, titles, and column headings that could be changed to clarify the Model Interconnection Tariff (2005 Report at 18, Att. A).

At this time, the technical issues associated with interconnecting DG to secondary network systems remain unresolved (id. at 103). The DG Collaborative notes that the technical challenges associated with interconnecting DG to network systems are greater than those associated with radial systems for two major reasons: (1) secondary network systems

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[5] Attachment A to the 2005 Report is a redlined version of the Model Interconnection Tariff that shows all changes from the Model Interconnection Tariff approved in D.T.E. 02-38-B.

[6] ISO-NE is a regional transmission organization serving the New England region. ISO-NE: (i) operates New England's bulk electric power system, providing centrally dispatched direction for the generation and flow of electricity across the region's high-voltage transmission lines; (ii) administers and oversees New England's wholesale electricity marketplace; and (iii) manages the planning process of the bulk electric power system and the wholesale markets.

were not designed to accommodate inflows of power from a generating customer; and (2) special protection and control equipment may be necessary to ensure that DG does not cause damage to utility equipment or degrade power quality to nearby customers (id. at 92).[7] Accordingly, the DG Collaborative recommends monitoring and analysis of network interconnection projects as these may exist,[8] participating in IEEE discussions focused on network interconnection, and monitoring the development of network interconnection standards in venues such as California (id. at 106). With respect to secondary spot and area network interconnection, the DG Collaborative does not recommend any changes to the Model Interconnection Tariff (id. at 21).

C. The Indemnification Clause

The DG Collaborative proposed an amendment to the indemnification clause in the Interconnection Agreement portion of the tariff that would add the following language: "Except as precluded by Section 1 of Article 62 of the Amendment to the constitution of the Commonwealth of Massachusetts regarding pledges of credit of the Commonwealth

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[7] There are generally two types of distribution systems: radial and secondary networks. In a secondary network, electricity is delivered through an integrated system of multiple transformers and multiple underground cables that are interconnected and operate in parallel. In a secondary network system, any disruption to the customer's DG could adversely impact the network's performance. In a radial system, there is only one line and one path for power to flow, starting at the distribution substation and ending at the customer's meter. The radial system is made up of independent feeders that branch out radially from a common source of supply. Disruptions to DG on a radial system would be limited to the load on that radial line (2005 Report at 85).

[8] Nationally, the DG Collaborative identified 12 projects that are interconnected to spot networks and 23 projects that may be interconnected to area networks (2005 Report at 87).

(2005 Report at 47, Att. B at 51, ¶ 12)." DCAM commented that both the current language of the tariff and the proposed language are insufficient to govern interconnection agreements where the Commonwealth is a party (DCAM Comments at 2).[9] DCAM stated that the credit of the Commonwealth may not be given or loaned to any individual, private association, or corporation that is privately owned and managed (id. citing Mass. Const. Amend. Art. 62, § 1). DCAM proposed that the tariff contain two separate forms, one with language that DCAM states does not "run afoul" of Article 62, § 1 that would apply to any agreement with the Commonwealth, and the present form for all others (DCAM Comments at 3-4).

III. ANALYSIS AND FINDINGS

A. Proposed Revisions to the Model Interconnection Tariff

The Department has reviewed the proposed changes to the Model Interconnection Tariff to determine whether the Revised Model Interconnection Tariff would prescribe standards and practices that recognize legitimate safety and reliability concerns associated with interconnection, but also would not unduly inhibit the installation of DG. D.T.E. 02-38, at 2. In addition, the Department has reviewed the proposed changes to the Model Interconnection

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[9] The indemnification language at issue appears in several sections of the tariff presently in effect: (1) the Interconnection Service Agreement; (2) the Third Party Owner Agreement; (3) the Simplified Process Application; and (4) the Expedited/Standard Process Interconnection Application. D.T.E. 02-38-B, Att. A at 52, 60, 63,72. In sum, this indemnification language provides for reciprocal indemnification between the interconnecting customer and the distribution company against unaffiliated third party claims for performance under the tariff, except for the negligence or willful misconduct of the party seeking indemnification.

Tariff to determine whether they are consistent with applicable law, Department precedent, and the public interest. See Street Restoration Standards, D.T.E. 98-22, at 4 (1999); The Berkshire Gas Company, D.P.U. 96-92, at 8 (1996); Boston Gas Company, D.P.U 96-50 (Phase I) at 7 (1996); Massachusetts Electric Company, D.P.U. 96-59, at 7 (1996). Finally, any amendments to the Model Interconnection Tariff must not create any technical, economic, and regulatory barriers to DG. D.T.E. 02-38-B at 18; D.T.E. 02-38, at 2; see Competitive Market Initiatives, D.T.E. 01-54, at 11 (2001); Electric Industry Restructuring, D.P.U./D.T.E. 96-100, at 23 (1998).

The DG Collaborative established a working group to assess the effectiveness and adequacy of the Model Interconnection Tariff in order to identify any changes that would make the process more efficient. The 2005 Report included substantial documentation and a clear explanation to justify the proposed changes.[10] The revisions were clearly presented and sufficiently explained with adequate supporting documentation. The DG Collaborative agreed upon these revisions, and comments on the proposed revisions to the tariff were generally favorable.

DCAM opposed the proposed language amending the indemnification clause (see 2005 Report at 47, Att. B at 51, ¶ 12). In addition, DCAM's concern extends to the indemnification language currently stated in Model Interconnection Tariff. Resolution of this

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[10] We recognize that, due to the divergent interests of the participants in the DG Collaborative, the proposed amendments were a result of a collaborative process, where compromise on these proposed amendments, or any other issue, may be linked to resolution of other issues. See D.T.E. 02-38-B at 24.

issue is important not only in terms of DCAM's immediate concern, but also prospectively in terms of the Commonwealth's ability to implement DG as an economic development resource at all sites owned by the Commonwealth. It is clear that the DG Collaborative has made a good faith effort to respond to DCAM's concerns. However, the reluctance of DCAM to accept the proposed language indicates that additional work is needed. Distribution companies have a duty to "ensure that all . . . [DG facilities] have fair access on reasonable terms to [a] [c]ompany's [d]istribution facilities." 220 C.M.R. § 11.04(4).[11]

The Department is aware that negotiations between DCAM, DOER, and distribution companies are taking place in order to develop mutually acceptable language that may resolve this matter for all Commonwealth DG interconnection proposals. The Department encourages continued negotiations aimed at an expeditious resolution of this issue. Because the record is insufficient for us to make any conclusions on language that may be acceptable to DCAM and others, we take no action at this time. Accordingly, we will not include the language amending the existing indemnification clause in the Revised Model Distributed Generation Interconnection Standards and Procedures Tariff.

The other proposed changes do not compromise the safety and reliability of the electric distribution system and present no undue technical, economic or regulatory barriers to DG. In

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[11] A wide range of DG interconnection scenarios exist under the umbrella of this tariff. The dispute resolution process in the tariff prescribes a method to resolve in an efficient, cost-effective and timely manner those issues: (1) that may not precisely conform with the tariff; or (2) upon which there is disagreement as to the applicability of certain terms; or (3) that may not be able to conform with the tariff (see DCAM Comments).

consideration of these factors, we find that the proposed changes to the Model Interconnection do not create any technical, economic or regulatory barriers to DG. We conclude that the proposed revisions to the Model Interconnection Tariff are consistent with applicable law, Department precedent, and the public interest. Accordingly, with the exception of the proposed language on indemnification, we approve the proposed changes. Pursuant to G.L. c. 164, § 94 and 220 C.M.R. §§ 5.00 et seq., distribution companies shall, no later than fourteen (14) days following the issuance of this Order, file with the Department conforming Interconnection Standards Tariffs consistent with the Revised Model Interconnection Standard Tariff attached to this Order.

B. Meter Ownership

In D.T.E. 02-38-B at 27-28, in response to comments that the DG Collaborative was unable to reach a consensus on meter ownership, the Department determined that the record was insufficient to reach a conclusion on meter ownership as it relates to DG. The Department requested that the DG Collaborative continue to consider the issue of meter ownership by distributed generators. Id. at 28. The DG Collaborative has since concluded that ownership of a single billing meter for a facility was not a barrier to DG, and that the issue of meter ownership should not be considered in 2005/2006 (2005 Report at 43). The Department accepts this determination and appreciates the DG Collaborative's attention to this issue. Accordingly, we will no longer address the issue of meter ownership in this proceeding.[12]

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[12] A Qualifying Facility or an on-site generating facility may elect to own the meter used to measure its generation output. See 220 C.M.R. §§ 8.04(8).

C. Other Issues

1. Network Interconnection

The DG Collaborative recognizes the complexities associated with interconnecting and operating DG on a distribution system network. Accordingly, the DG Collaborative plans further monitoring, analysis, and discussion to better understand the nature of these complexities and their implications, prior to recommending adjustments to the Model Interconnection Tariff. The DG Collaborative has identified a number of existing DG facilities and pilot projects that may, as experience accumulates, provide empirical data regarding safe and reliable operation of DG in a network setting. The Department recognizes the importance of safe and reliable distribution system operations, and, in particular, the safety and reliability needs of Massachusetts' urban centers that typically depend on network systems. Accordingly, the Department accepts the DG Collaborative's recommendation to monitor and analyze DG interconnection projects on network systems, as these may exist, participate in IEEE discussions on network interconnection, and monitor the development of network interconnection standards in other jurisdictions.

2. Role of DG in Distribution Company Planning

The DG Collaborative has advanced the general hypothesis that DG contributes value to the distribution system (2005 Report at 28, Att. C). In order to test that hypothesis, the DG Collaborative intends to construct a cost-benefit model designed to include all costs and benefits

associated with DG.[13] Particular cost and benefit data would be derived from several sources, including the eight Massachusetts planning opportunities, pilot projects, and existing DG installations (id. at 27-29, 135-151). In this way, the DG Collaborative believes that the Department would be provided with a more complete view of the viability of DG as a resource to the distribution system and its electricity customers (id. at 122-133, Att. C). In addition, if the hypothesis appears to be valid, business and regulatory models designed to capture the economic value of DG may be advanced.

The Department appreciates the careful consideration, and comprehensive effort undertaken by the DG Collaborative in preparing the 2005 Report and developing proposed revisions to the Model Interconnection Tariff. We recognize the amount of time, effort and expense involved for DG providers, consumers, public interest groups, governmental and quasi-governmental agencies, and the distribution companies to meet regularly, and to develop a consensus among the diverse interests in this proceeding. The Department would like to commend MTC for providing mediation and technical support for this important proceeding. The Department anticipates that the ongoing activities of the DG Collaborative will continue to result in informative and constructive recommendations on this complex set of issues.

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[13] The Electric Power Research Institute ("EPRI") helped to inform the DG Collaborative's discussion of its cost-benefit model in its report, "A Framework for Developing Win-Win Strategies for Distributed Energy Resources in Massachusetts" (2005 Report at 146, Att. C). EPRI has used such a model in California to identify stakeholder interests, quantify these, and then pursue trade-offs such that each stakeholder can benefit from a DG installation (id. Att. C at C-27 to C-42).

IV. ORDER

Accordingly, after due notice, opportunity to be heard, and consideration, the Department

ORDERS: That the proposed changes to Tariff to Accompany Proposed Uniform Standards for Interconnecting Distributed Generation in Massachusetts, filed by the Distributed Generation Collaborative on May 31, 2005 as amended in this Order, be and hereby are approved; and it is

FURTHER ORDERED: That no later than fourteen days following the issuance of this Order, Boston Edison Company, Cambridge Electric Light Company, Commonwealth Electric Company, Fitchburg Gas and Electric Light Company, Massachusetts Electric Company and Nantucket Electric Company, and Western Massachusetts Electric Company shall submit individual Interconnection Standards Tariffs consistent with this Order; and it is

FURTHER ORDERED: That Boston Edison Company, Cambridge Electric Light Company, Commonwealth Electric Company, Fitchburg Gas and Electric Light Company, Massachusetts Electric Company and Nantucket Electric Company, and Western Massachusetts Electric Company shall comply with all directives contained in this Order.

By Order of the Department,

_____/s/_____
Paul G. Afonso, Chairman

_____ /s/_____
James Connelly, Commissioner

_____/s/_____
W. Robert Keating, Commissioner

_____/s/_____
Judith F. Judson, Commissioner

_____/s/_____
Brian Paul Golden, Commissioner

Appeal as to matters of law from any final decision, order or ruling of the Commission may be taken to the Supreme Judicial Court by an aggrieved party in interest by the filing of a written petition praying that the Order of the Commission be modified or set aside in whole or in part.

Such petition for appeal shall be filed with the Secretary of the Commission within 20 days after the date of service of the decision, order or ruling of the Commission, or within such further time as the Commission may allow upon request filed prior to the expiration of 20 days after the date of service of said decision, order or ruling. Within ten days after such petition has been filed, the appealing party shall enter the appeal in the Supreme Judicial Court sitting in Suffolk County by filing a copy thereof with the Clerk of said Court. Sec. 5, Chapter 25, G.L. Ter. Ed., as most recently amended by Chapter 485 of the Acts of 1971.